

CLAIMS

I claim:

1 1. A method for executing an operation upon a linked data
2 structure having at least one element, the method comprising the
3 steps of:

- 4 (a) performing a first set of operation tasks in a first
5 phase, the first set of operation tasks operable to
6 effect a first set of element state transitions;
7 (b) developing a second set of operation tasks, the second
8 set of operation tasks operable to effect a second set
9 of element state transitions, the second set of
10 element state transitions being distinct from the
11 first set of element state transitions; and
12 (c) performing the second set of operation tasks in a
13 second phase.

1 2. The method of claim 1 wherein the first set of operation
2 tasks includes navigating existing data structure links.

1 3. The method of claim 1 wherein the step of developing a
2 second set of operation tasks further comprises developing
3 pointers to the data structure, the pointers being used in the
4 step of performing the second set of operation tasks in a second
5 phase.

1 4. The method of claim 1 wherein operation tasks of the second
2 set of operation tasks are performed atomically.

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1 8. The method of claim 1 wherein the first set of element
2 state transitions further comprises:
3 (a) a valid state to a pending delete state transition;
4 (b) a pre-associated state to a pending insert state
5 transition; and
6 (c) a pending insert state to a hidden state transition.

1 9. The method of claim 1 wherein the second set of element
2 state transitions further comprises:
3 (a) a pending insert state to a valid state transition;
4 (b) a pending delete state to an invalid state transition;
5 (c) a hidden state to an invalid state transition;
6 (d) a pending delete state to a valid state transition;
7 (e) a hidden state to a pending insert state transition;
8 and
9 (f) a pending insert state to an invalid state transition.